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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,386	09/02/2004	Marc Bednarz	P/4600-2	1647

7590
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09/20/2007

EXAMINER

WANG, EUGENIA

ART UNIT	PAPER NUMBER
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1745

MAIL DATE	DELIVERY MODE
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09/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/506,386</p>	<p>Applicant(s)</p> <p align="center">BEDNARZ ET AL.</p>	
	<p>Examiner</p> <p align="center">Eugenia Wang</p>	<p>Art Unit</p> <p align="center">1745</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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DETAILED ACTION

Response to Amendment

1. In response to the amendment filed July 26, 2007:
 - a. Claims 10-13 are pending, with claims 14-22 being withdrawn as being drawn to a nonelected invention.
 - b. The previous objection to the specification has been withdrawn in light of the amendment.
 - c. The previous objection to the drawings has been withdrawn in light of the amendment.
 - d. The rejection with respect to US 5492777 (Isenberg et al.) has been withdrawn in light of the amendment. The core of the previous rejection with respect to US 3544374 (D'Alessandro et al.) of record is maintained with changes being necessitated by the amendment, thus the action is final.

Information Disclosure Statement

2. The information disclosure statement filed July 30, 2007 has been placed in the application file and the information referred to therein has been considered as to the merits. (NOTE: DE 4027655 has not been considered. And only the provided abstract JP 4324253 has been considered. For full consideration of the prior art listed, Examiner invites Applicant to submit translations for DE 4027655 and JP 4324253.)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3544374 (D'Alessandro et al.).

As to claim 10, D'Alessandro et al. teaches a method to prevent corrosion of hydrogen permeable membranes in anodes (col. 2, lines 27-31). The method comprises applying a direct current potential between the cathode and anode of the fuel cell, thus reducing it with respect to the cathode (col. 2, lines 45-51). Furthermore, corrosion prevention is achieved by removing hydrogen from the membrane, where hydrogen removal can be achieved by flushing the membrane with an inert gas, including nitrogen, carbon dioxide, flue gas, argon, and **steam** (col. 2, lines 51-70). In addition, it is said that steam is used to purge all of the hydrogen from the vicinity of the membrane (col. 2, lines 70-72; col. 3, lines 1-7). It is noted that although molten sodium hydroxide is embodied for the electrolyte, it is also recognized that that molten alkali metal hydroxides and molten carbonates can be used with such an invention, thus teaching the use of molten carbonate fuel cells (col. 3, lines 59-60; col. 5, lines 27-41). Flushing the anode membrane and applying the direct current would inherently yield the anodes inert, since the applies the same process as claim 10 of the instant application.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the

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allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that D'Alessandro et al.'s method uses steps employed by the instant application. Therefore, the resulting state of the anodes would be in the same state (inert) after the application of the same method.

The Examiner requires applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

As to claim 11, D'Alessandro et al. teaches flushing the anode membrane with an inert gas including nitrogen, **carbon dioxide**, flue gas, argon, and steam prior to steam treatment (col. 2, lines 51-72; col. 3, lines 1-7). Therefore supplying CO₂ as the inert gas prior to steam is one embodiment of D'Alessandro et al. See the drawing for evidence that inert gas and steam are used for the flushing (via valves [31] and [26], respectively).

Alternately, it would have been obvious to choose carbon dioxide as the inert gas, as it is one of the inert gases listed in a short laundry list of inert gases that can be

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used for flushing, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As to claims 12 and 13, D'Alessandro et al.'s method teaches that the inert gas (the embodiment where carbon dioxide is used is chosen) is introduced and is followed by a steam purging (col. 2, lines 51-72; col. 3, lines 1-7). Therefore carbon dioxide is providing the initial inerting. After it is used to flush, steam flushing follows it. Thus it can be interpreted that the carbon dioxide is reduced (to zero) prior to steam flushing.

Alternately, it can be interpreted that both carbon dioxide and steam are flowing at the same time (after the steam is introduced). However, there is motivation to reduce the carbon dioxide flow once steam flow is introduced; the motivation is to accommodate the space that needs flushing. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to lower the carbon dioxide flow once steam is introduced in order to have the correct flow as to not overflow the anode chamber while inerting.

Response to Arguments

4. Applicant's arguments filed July 26, 2007 (with respect to Isenberg et al.) have been considered and are persuasive. Thus the rejection to claims 10-13 with respect to Isenberg et al. have been withdrawn.

5. Applicant's arguments filed July 26, 2007 (with respect to D'Alessandro et al.) have been fully considered but they are not persuasive.

With respect to D'Alessandro et al., Applicant argues that (a) during the times of turning on and off, there is no hydrogen produced and (b) the voltage applied between the anode and the cathode does not conduce electrolysis.

Examiner respectfully disagrees with the arguments in both (a) and (b). These statements are made without evidence to the contrary. With respect to argument (a), examiner holds the position that the fuel cell is an electrochemical cell which functions as a fuel cell in an electricity generator mode and as an electrolyzer in a fuel synthesizer mode and that electrolysis of water (steam) occurs when a DC current is provided. With respect to argument (b), the electrolysis reaction evolves hydrogen and oxygen, as seen in the following equation: $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugenia Wang whose telephone number is 571-272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EW



GREGG CANTELMO
PRIMARY EXAMINER

9/16/07